1.0 EXECUTIVE SUMMARY

1.1 PROJECT DESCRIPTION AND OBJECTIVES

The Palomar Energy Project consists of a proposed natural gas-fired combined cycle power plant and associated reclaimed water supply and brine return pipelines. The project will have a nominal electrical output of 500 MW, and commercial operation is planned for the summer of 2004. The project will be fueled with natural gas delivered via the San Diego Gas and Electric Company (SDG&E) gas system, and an existing SDG&E natural gas pipeline with sufficient capacity to serve the project is located immediately adjacent to the project site. The project includes a new 230 kV switchyard connecting with an existing SDG&E electric transmission line also located immediately adjacent to the project site. Reclaimed water for the project will be supplied from the City of Escondido's Hale Avenue Resource Recovery Facility (HARRF) via a new 1.1 mile, 16-inch supply pipeline extending from an existing reclaimed water main. Brine from the project will be returned to the HARRF via a new 1.1 mile, 8-inch return pipeline routed alongside the reclaimed water supply pipeline and connecting to an existing brine return line.

The project owner and Applicant submitting this Application for Certification (AFC) is Palomar Energy, LLC, a Delaware limited liability company, the sole member of which is a subsidiary of Sempra Energy Resources (SER). The Palomar Energy Project is among those resources that have been identified as potential suppliers of electricity under a contract between Sempra Energy Resources and the California Department of Water Resources for the sale of 1900 MW.

The Palomar Energy Project meets all of the objectives established for the project. In particular, the project:

- Provides a full 500 MW addition to the load-serving capability within the SDG&E load pocket. The project does not use or displace SDG&E import capability, and it does not displace existing generation as a result of transmission congestion.
- Avoids the construction of new transmission lines, as the project interconnects with an existing 230 kV line located immediately adjacent to the site.
- Minimizes the need for SDG&E gas system upgrades, as an existing pipeline with sufficient capacity to serve the project is located immediately adjacent to the site.
- Uses reclaimed water from the City of Escondido's nearby Hale Avenue Resource Recovery Facility to supply the project's process water requirements.
- Is located on a site that is surrounded by existing and future industrial land uses.
- Makes effective use of landforms for visual screening of the power plant.

1.2 SITE DESCRIPTION AND INDUSTRIAL PARK SETTING

The power plant is proposed to be located on a vacant 20-acre site within a planned 186-acre industrial park in the City of Escondido, California. Figure 2.2-1 illustrates the location of the

project site, the route of the reclaimed water supply and brine return pipelines, and the location of a minor SDG&E gas system upgrade associated with the project. Development of the industrial park will result in eight Planning Areas, each comprising a graded pad as illustrated in Figure 2.2-2. The 20-acre project site subsumes a 14.1-acre pad designated as Planning Area 1.

The industrial park project is known as the Escondido Research and Technology Center (ERTC). The ERTC project and a draft Specific Plan for the industrial park project area are currently undergoing a comprehensive California Environmental Quality Act (CEQA) review, with the City of Escondido as Lead Agency. Under the draft Specific Plan, two alternative land uses are allowable in Planning Area 1, either light manufacturing or a power plant use. The ERTC project is obtaining its development permits and approvals through the City of Escondido's established permitting and approval processes.

Balanced cut-and-fill grading of the 186-acre ERTC project site, including Planning Area 1, will be completed prior to initiation of any onsite work on the Palomar Energy Project. The net excavated materials from Planning Area 1 will be used as fill in other Planning Areas of the industrial park. These prior landform modifications resulting from grading of the ERTC project are being addressed in the CEQA document being prepared by the City of Escondido.

1.3 ENVIRONMENTAL INFORMATION

1.3.1 Contents of this AFC

This AFC has been prepared in accordance with CEC guidelines and provides:

- Description of the existing environment and assessment of project impacts.
- Description of proposed mitigation measures to assure that environmental issues are properly and responsibly addressed.
- Discussion of compliance with applicable laws, ordinances, regulations and standards.

In addition to assessment of project impacts, this AFC also provides assessment of cumulative impacts. In particular, the cumulative impacts of the ERTC project together with the Palomar project are addressed in each environmental resource area of this AFC. To provide data requested by the CEC staff, each cumulative impact analysis delineates between effects associated with Planning Area 1 of the ERTC project versus the remainder of the ERTC project.

The conclusion of the environmental assessment is that the Palomar Energy Project with its proposed mitigation measures will not cause significant impacts to the environment, either by itself or cumulatively with other projects.

1.3.2 Air Quality

The Palomar project is classified as a major source (>100 tons per year) of nitrogen oxides (NO_x), carbon monoxide (CO), and particulate matter (PM_{10}). The project will employ Best Available Control Technology (BACT) to control air emissions. The project's two combustion turbine-generators (CTGs) will be fueled with clean burning natural gas and will be equipped with dry low NO_x combustors. The duct burners located within the project's two heat recovery steam generators (HRSGs) also will be fueled with natural gas. The project will be equipped with selective catalytic reduction (SCR) for control of NO_x and an oxidation catalyst for control of CO and volatile organic compounds (VOCs).

Air dispersion modeling was performed to analyze the impacts of project emissions during construction, commissioning, and operations including startups. These analyses demonstrate that the project will not cause or contribute to exceedances of the ambient air quality standards, with the exception of PM_{10} standards during construction.

An Air Quality Impact Analysis (AQIA) was performed for the Palomar project with respect to federal Significant Impact Levels (SILs), federal Prevention of Significant Deterioration (PSD) increments, National Ambient Air Quality Standards (National AAQS), and California AAQS. In all cases, project impacts were found to be less than the SILs and PSD increments. When added to ambient background levels, in all cases project impacts were found to be less than the National AAQS, and with one exception, less than the California AAQS. The exception is the California 24-hour PM_{10} AAQS, because ambient background levels measured at the Escondido monitoring station have already exceeded this standard (once in 1998, once in 1999, and twice in 2000, with annual average concentrations remaining relatively constant through the period).

Further analysis was performed to determine if the project would cause any new exceedances of the California 24-hour PM_{10} AAQS. As measured at the Escondido monitoring station, ambient background levels approached this standard (i.e., were within 5 $\mu g/m^3$ of the 50 $\mu g/m^3$ standard) on six specific days during the 3-year meteorological data set period. Based on the meteorological conditions on the six days, the modeled maximum project impacts occur in an area of elevated terrain about 2 miles west of the project site, well outside of the Escondido urban area. This maximum impact location is not anomalous, as the modeled maximum project impacts based on the entire 3-year meteorological data set occur in the same area. In contrast, the Escondido monitoring station is located in the midst of the Escondido urban area, where maximum ambient background levels are expected to occur. Based on the meteorological conditions on the six days, the modeled project impacts at the Escondido monitoring station (and elsewhere in the Escondido urban area) are only 0.2 $\mu g/m^3$ or less. When these impacts are added to the ambient background levels measured on the six days, the results do not exceed the California 24-hour PM_{10} AAQS. Therefore, the project is not expected to cause any new exceedances of this standard.

An AQIA and an air quality related values (AQRVs, e.g., visibility and acid deposition) analysis was performed for PSD Class I areas within 100 kilometers of the Palomar Energy Project site (Agua Tibia and San Jacinto Wilderness Areas). These analyses conclude that the project will have no significant impact on the air quality or AQRVs in these areas.

Both California and federal laws require major new sources of non-attainment pollutants located in non-attainment areas to provide emission offsets in the form of emission reduction credits (ERCs). The Palomar project will trigger offset requirements for NO_x emissions as a precursor to ozone, and the Applicant is securing ERCs to satisfy these requirements.

Emissions sources during project construction will consist of exhaust from heavy equipment and fugitive dust from disturbed areas. Control measures during construction will include application of water or chemical stabilizers to control dust, and measures that minimize exhaust emissions will be used to the extent practical.

1.3.3 Biological Resources

In accordance with CEC guidelines, biological surveys were conducted of the Palomar site (Planning Area 1 of the ERTC project), the pipeline routes, and the surrounding areas. In addition to the general vegetation and wildlife surveys, protocol-level surveys were conducted for a number of special-status species. The surveys found individuals of two special status animal species: the California Gnatcatcher, a federally listed threatened species, and the Western Spadefoot Toad, a federal and state species of concern. No special-status plant species were found. Planning Area 1 contains 6.9 acres of the native California Coastal Sagebrush (sage scrub) vegetation community and 1.5 acres of non-native California Annual Grasslands, both vegetation communities that have diminished substantially in San Diego County due to agricultural and urban development. Coastal sage scrub is the primary habitat for the California Gnatcatcher as well as other special status species, although only the gnatcatcher was found in the surveys. The route of the reclaimed water and brine return pipelines contains 0.5 acre of sage scrub and 1.5 acres of annual grasslands.

Surveys conducted in 2001 identified two nesting pairs of gnatcatchers in or near Planning Area 1, and two nesting pairs and a number of juveniles on other portions of the overall ERTC project site. Surveys also identified a small population of the Western Spadefoot Toad in Planning Area 1.

Cut-and-fill grading of the ERTC industrial park project will eliminate the existing biological resources of nearly the entire ERTC project site, including all of the biological resources in Planning Area 1 and the water pipeline route. This impact will occur prior to initiation of any onsite work on the Palomar project, and will occur even if the power plant is not constructed, because in such event Planning Area 1 would be used for other industrial park development purposes. Thus, the ERTC project will be responsible for mitigation of this impact under the CEQA and permitting processes being conducted by the City of Escondido, as discussed below.

It is expected that mitigation of impacts of the ERTC project on biological resources will be accomplished through habitat-based mitigation approaches. This involves replacement of lost habitat (i.e., sage scrub and annual grasslands) by acquisition and conservation of equivalent habitat at different locations. Mitigation under the standards of the City of Escondido 1999 draft Multiple Habitat Conservation Plan would require a 2:1 replacement ratio for California Gnatcatcher-occupied sage scrub acreage and conservation of an equal number of gnatcatchers within a preserve system. Mitigation of impacts on Western Spadefoot Toad habitat would require creation or restoration of an equivalent acreage of habitat that supports seasonal ponds in preserve lands.

1.3.4 Water Resources

The Palomar project will conserve water by utilizing reclaimed water for its process water requirements. Reclaimed water of sufficient quantity and quality is available from the City of Escondido's Hale Avenue Resource Recovery Facility (HARRF), and will be conveyed to the site via a new 1.1 mile, 16-inch pipeline that connects to an existing City of Escondido reclaimed water main. The plant's cooling tower will evaporate about three-fourths of the reclaimed water supplied to the project, and the remaining brine will be returned to the HARRF via a new 1.1 mile, 8-inch pipeline routed alongside the reclaimed water supply pipeline and connecting to an existing City of Escondido brine return line.

The project will not result in any significant impacts with regard to storm water runoff or other local water resource issues. Stormwater Pollution Prevention Plan (SWPPP), Best Management Practices (BMPs), and drainage, erosion, and sediment control measures will be implemented to prevent surface water impacts during project construction and operation.

1.3.5 Geologic Resources and Hazards

The Palomar project will not adversely affect geologic resources of recreational, commercial, or scientific value. The facilities will be designed in conformance with Uniform Building Code (UBC) criteria for Seismic Zone 4. The power plant site and pipeline routes are not located near any known faults, rupture zones, landslide areas, subsidence areas, or other geologic hazards. The surface and subsurface geologic units are not unique, and the potential for encountering rare minerals is minimal.

1.3.6 Agriculture and Soils

The Palomar project will not cause significant impacts to agriculture or soils. The power plant site currently is partly disturbed and undeveloped. An approximately 6-acre area in the northern portion of the plant site is considered Unique Farmland; this area was formerly used as a citrus and avocado orchard, and a few untended trees remain. The site does not contain Prime Farmland or Farmland of Statewide Importance.

During excavations (e.g., for foundations and utilities) and finish grading for the power plant, site soils will be susceptible to erosion. Erosion control plans and Stormwater Pollution Prevention Plans will be prepared prior to construction and implemented during and after

construction. Construction activities will be in conformance with applicable regulatory requirements and sound construction industry practices.

1.3.7 Land Use

The Palomar project will be located adjacent to an existing industrial area and within a planned industrial park. The planned industrial park, including the power plant site, is located within a Specific Plan Area (SPA) of the City of Escondido. This area is known as the Quail Hills SPA, and has been planned for industrial development since adoption of the Quail Hills Specific Plan by the City of Escondido in 1988. The draft Escondido Research and Technology Center Specific Plan will replace the Quail Hills Specific Plan and rename the SPA. This draft Specific Plan and an associated General Plan amendment are currently undergoing review by the City of Escondido. The draft Specific Plan calls for industrial development of the SPA, and specifically allows a nominal 550 MW power plant land use in Planning Area 1 of the SPA. The ERTC industrial park project that is undergoing concurrent review by the City of Escondido will develop Planning Areas 1 through 8 of the SPA and create new legal parcels throughout the SPA. With City of Escondido approval of the draft Specific Plan, General Plan amendment, and ERTC project, Planning Area 1 will be in conformance with all local land use requirements for use as the site of the Palomar project.

1.3.8 Socioeconomics

Construction and operation of the Palomar project will have a positive impact on fiscal resources in the region. The project will bring sales tax and property tax revenues to the City of Escondido and San Diego County, as well as construction payrolls, operations payrolls, and purchases of materials and supplies from area businesses. Onsite project construction is expected to require 21 months and will provide short-term job opportunities.

Given the large construction workforce included among San Diego County's population of almost three million, project construction needs will be filled mostly by San Diego County workers, with only a small percentage (perhaps 10 percent) of specialized labor coming from outside of the county. The operations workforce of about 20 full-time personnel will not cause population growth that could adversely impact local schools or law enforcement, fire, emergency, medical, or utility services.

1.3.9 Noise

Sensitive receptors with the greatest potential exposure to noise impacts from operation of the Palomar project are residences on elevated lots approximately 2,300 feet southwest of the plant site. With the noise attenuation measures incorporated into the project design, and given the elevated terrain separating these residences from the plant site, the attenuated noise level at these residences is estimated at 37 dBA. This compares favorably with the noise monitoring data obtained at this location, which indicates background noise levels of 40 dBA or higher. Attenuated noise levels at other sensitive receptor locations in the project area are estimated at 30 to 33 dBA, well under background noise levels. Thus, the analysis demonstrates that project noise during operation will not cause significant adverse impacts.

Project noise during construction will be short-term and likewise will not cause significant adverse impacts.

1.3.10 Visual Resources

Impacts of the Palomar project on visual resources are expected to be less than significant. The proposed plant site, Planning Area 1 of the ERTC industrial park project, will be bounded on three sides by terrain that rises 20 to 80 feet above the graded pad elevation. This terrain will provide effective visual screening, and landscaping around the site perimeter will further screen the power plant from view. Project structures will be constructed of materials that limit glare, and finished with flat neutral tones that blend with the surrounding environment. Project lighting will be designed to minimize nighttime visual intrusiveness in the surrounding area, while meeting site safety and security needs. The power plant's cooling tower will incorporate plume abatement design features to avoid the formation of a visible moisture plume above the cooling tower cells.

The project site is located in an area of existing and planned industrial land uses. With assistance from the CEC staff, seven Key Observation Points (KOPs) located in residential areas in the project vicinity were selected for preparation of visual simulations. A series of photographs provided at the end of Section 5.10 present the existing conditions as viewed from each KOP. Corresponding visual simulations are provided that represent the "before conditions" (i.e., before construction of the Palomar project facilities but after grading of the ERTC project) as viewed from each KOP. A third set of visual simulations is provided to illustrate the "after conditions" as viewed from each KOP, providing a clear image of the location, scale, and visual appearance of the Palomar project after its completion.

1.3.11 Traffic and Transportation

Construction of the Palomar project will add a moderate amount of traffic during the peak construction period. However, the increase in traffic will be temporary and will not cause significant adverse impacts on traffic volume and flow conditions on affected roadways.

Long-term traffic associated with operation of the Palomar project includes the operations workforce, delivery of hazardous and non-hazardous materials, and hauling of wastes generated during operations. The small operations workforce of about 20 personnel, as well as materials deliveries and waste hauling, will involve very small traffic volumes and create minimal traffic impacts.

1.3.12 Hazardous Materials Handling

The Palomar project will implement accident prevention and mitigation measures regarding the use and storage of hazardous materials. These measures include risk management plans, hazard assessments, release prevention programs, emergency response programs, process management systems, employee training, and adherence to sound design standards and operating procedures.

Hazardous materials that will be used and stored onsite during operation of the power plant include a dilute solution of aqueous ammonia (>80% water) for the plant's selective catalytic reduction (SCR) system to control NO_x emissions, various water treatment and cleaning chemicals, and hydrogen for generator cooling. Analyses of potential accidental releases of hazardous material demonstrate that the project will not pose significant risks to areas surrounding the project site. With implementation of planned mitigation measures, no significant impacts are expected as a result of the Palomar project.

1.3.13 Waste Management

Wastes generated by the Palomar project during construction and operation include non-hazardous solid and liquid wastes (e.g., scrap metal and brine return water), as well as small quantities of hazardous solid and liquid wastes (e.g., spent SCR catalyst and waste lube oil). Recycling will be implemented where practicable. Appropriate procedures and personnel training will ensure that non-hazardous and hazardous wastes are managed to prevent significant adverse impacts to the environment or to worker/public health and safety.

Disposal of the project's non-hazardous and hazardous waste will not significantly impact the capacity of non-hazardous solid waste landfills or hazardous waste disposal facilities available for use by the project.

1.3.14 Worker Safety

Palomar project construction, operation, and maintenance activities may expose workers to physical and chemical hazards. Worker exposure to these hazards will be minimized through adherence to appropriate engineering design criteria, adherence to sound construction and operation practices, implementation of appropriate safety and administrative procedures, use of personal protective equipment, and compliance with applicable health and safety regulations.

Formalized safety programs and procedures will be used during project construction. During commissioning of the facility, the construction health and safety programs will transition into a program oriented towards operation and maintenance. The primary mitigation measures for worker hazards during both construction and operation will be contained in an Injury and Illness Prevention Plan. A site-specific emergency action plan will address potential emergencies, actions, and responsibilities. With implementation of the planned worker safety programs, no significant impacts are expected as a result of the Palomar project.

1.3.15 Public Health

Neither construction nor operation of the Palomar project is expected to pose significant risks to public health, and no significant cumulative health risks are expected. Construction-related air emissions will be temporary and localized. The estimated cancer risk from diesel particulate emissions during construction for the maximum exposed resident, for the maximum exposed worker in the nearest commercial building to the Palomar site, and at the

Palomar project property line, all are below the California Air Resources Board (ARB) and San Diego Air Pollution Control District (SDAPCD) significance level of 10-in-one-million.

During project operation, the maximum incremental lifetime cancer risk was calculated to be below the ARB and SDAPCD significance criterion of 10-in-one-million. Estimated cancer risks at sensitive receptors in the project vicinity are only one percent of the SDAPCD significance threshold of 10-in-one-million. Predicted chronic and acute non-cancer health effects are below the significance criteria of 1.0.

1.3.16 Cultural Resources

A record search, review of previous investigations in the project area, and a systematic field survey conducted in May 2001 found no significant cultural resources on the Palomar site or along the proposed pipeline routes. However, because some areas offered the field survey poor surface visibility due to vegetation, it is expected that archeological monitoring of the initial clearing and grubbing activities of the ERTC project will be required under the CEQA and permitting processes being conducted by the City of Escondido.

1.3.17 Paleontological Resources

Literature and archival reviews and field inspections indicate that there is minimal potential for impacts on paleontological resources as a result of the Palomar project. There are no known paleontological resources within about five miles of the Palomar site, and the geology of the area makes it very unlikely that any such resources would exist.